

EN

COMMERCIAL LINE

DUPLEX ROTO



Alupera[®]

DUPLEX Roto

All-purpose units DUPLEX Roto are used for comfort ventilation, as well as hot air heating and cooling offices, shops, retail, school buildings, restaurants, etc. The units are versatile because of the compact size, high heat recovery efficiency, low power consumption and minimal noise.

DUPLEX Roto completes the series of DUPLEX Multi and DUPLEX Basic units and expands ATREA with seven additional sizes of ventilation units with air capacities from 1,500 to 15,000 m³/h (nominal outputs with external pressure min. 200 Pa). Roto units follow the philosophy of multiple variability. Designers can easily modify spigot connections, filters, heating, cooling or the position of the units themselves. Superior construction of units is suitably supplemented with the latest high-tech regulation, which includes web-server and communication via the Internet.

1 500–5 000 Roto
indoor version



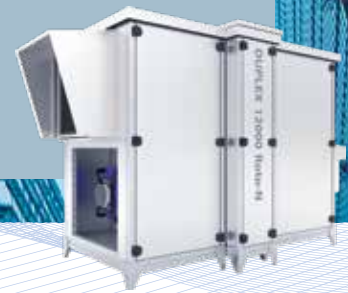
8 000–15 000 Roto
indoor version



1 500–5 000 Roto-N
rooftop version



8 000–15 000 Roto-N
rooftop version



ATREA'S PRODUCT RANGE

ATREA was started as a private company in 1990 in the Czech Republic. Very shortly it began to focus on the production of ventilation units with waste heat recovery. The company's founder has authored many authorship certificates, patents and industrial designs in this field.

ATREA's high quality products started to make their mark also in the demanding markets of Western Europe. The economic and geographic proximity led ATREA to focus primarily on the German market where it has established itself really well as a result of a good partnership and top-quality products, with the Netherlands, Switzerland, UK, Italy, Slovenia and other countries to follow.

- Commercial ventilation
 - air handling units from 500 – 15 000 mc/h
- Residential ventilation
 - air handling units from 180 – 500 mc/h
- Kitchen ventilation
 - whole area ventilation ceilings and kitchen hoods
- Passive houses by ATREA

For more information please visit www.atrea.eu



DUPLEX Roto / Roto-N

- Heat recovery efficiency up to 85 %
– rotary heat exchanger certified by Eurovent
- Highly variable
- Compact or assembly design – simplifies transport and installation
- Elegant look
- Integrated heating, preheating and cooling
- Floor-standing – indoor or rooftop installation
- Great thermal insulation of the casing
- The units meet requirement in accordance with Commission regulation (EU) No. 1253/2014 (Ecodesign)
- Internet interface as standard (aMotion)
- A major decrease in servicing costs
- EC fans – top German quality
- Smart phones application
- LCC – life cycle cost programme
- BMS compatibility
- Hygiene version according to VDI 6022
- Combined mode with air circulation
- Constant airflow and pressure control



Rotary heat exchangers are a Eurovent certified product of the renowned Czech company Kastt spol. s.r.o



Labyrinth sealing – DUPLEX 8000–15000 Roto rotary heat exchanger might be equipped with special labyrinth sealing. This unique solution improves the already excellent tightness against short circuit on the unique values of up to 1.5 %.

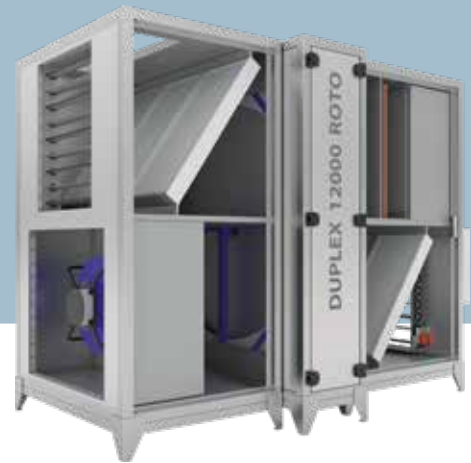
DUPLEX Roto due to their excellent parameters are intended for all types of facilities

- **Offices** – DUPLEX Roto for their compact dimensions could be easily fit into narrow HVAC rooms.
- **Sports complex** – take advantage of top performance for airing tennis halls, gyms, fitness centers and other sports facilities.
- **Apartment blocks** (central ventilation) – possibility of central ventilation by means of intelligent management, significant savings in investment costs.
- **Conference halls** – units are suitable for meeting areas.



Versatile assembled ventilation units **DUPLEX 1500–15000 Roto** due to their superb capabilities destined for wide use in all types of buildings.

These units are characterized by a very steep characteristic and very low power consumption – thanks to a top EC fans.

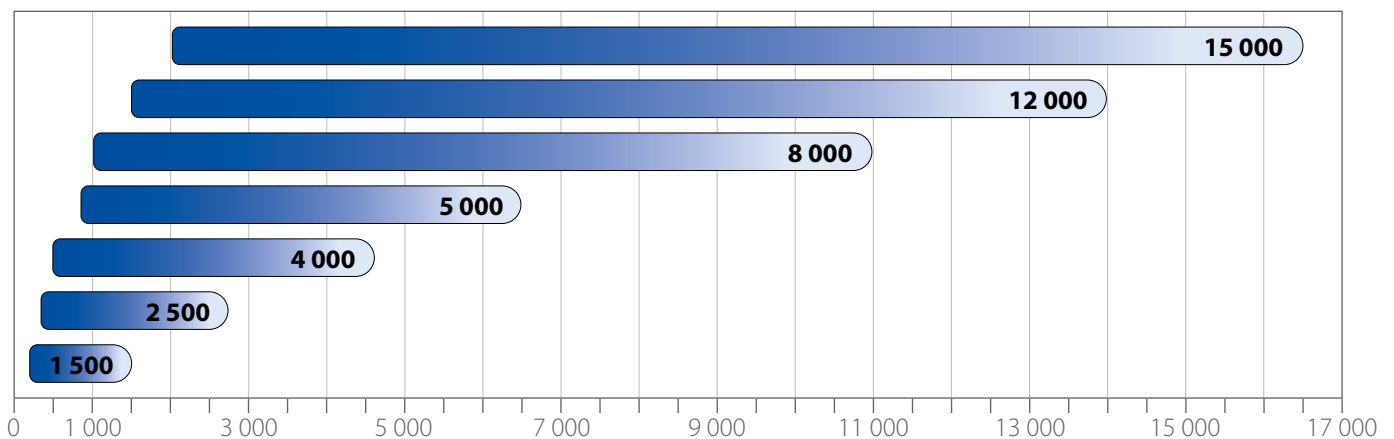


DUPLEX Roto

Universal indoor version

- Heat recovery efficiency up to 85 %
- Tailored according to customer requirements
- Compact or assembly design – simplifies transport and installation
- Integrated heating and cooling
- Internet interface as standard (aMotion)
- Smart phones application (aMotion)
- The units meet requirement in accordance with Commission regulation (EU) No. 1253/2014 (Ecodesign)
- BMS compatibility
- Hygiene version according to VDI 6022
- EC fans – top German quality
- Great thermal characteristic
- Circulation damper
- Constant airflow and pressure control
- Automatic rotary heat exchanger control

DUPLEX Roto performance graphs



DUPLEX Roto

1500, 2500, 4000, 5000, 8000, 12000, 15000



DUPLEX Roto

DUPLEX Roto

indoor version 1500–5000

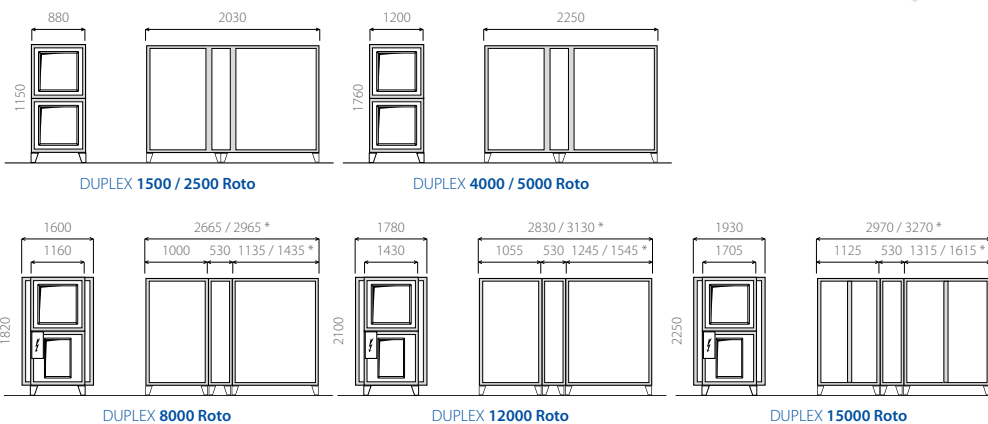
indoor version 8000–15000

disassembled unit 8000–15000



DUPLEX Roto

dimensions

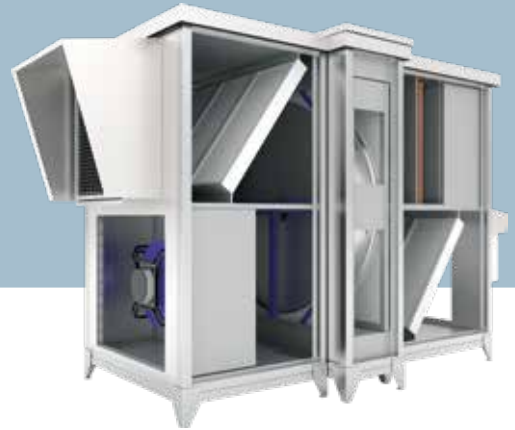


(*) dimension without / with circulation damper



Versatile assembled ventilation units **DUPLEX 1500–15000 Roto-N** are thanks to their construction fully adapted for rooftop installation.

Rooftop units are equipped with special hoods and roof, that protects the unit against the weather conditions.



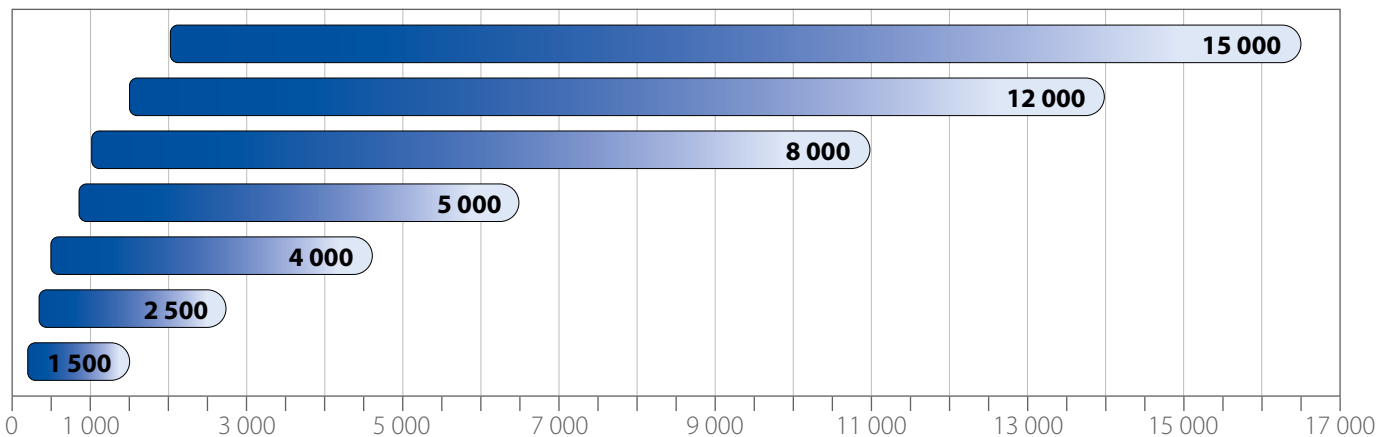
DUPLEX Roto-N

Rootfoop version with variable configuration of discharge ports

- ▣ Heat recovery efficiency up to 85 %
- ▣ Tailored according to customer requirements
- ▣ Compact or assembly design – simplifies transport and installation
- ▣ Integrated heating and cooling
- ▣ Internet interface as standard (aMotion)
- ▣ Smart phones application (aMotion)
- ▣ The units meet requirement in accordance with Commision regulation (EU) No. 1253/2014 (Ecodesign)
- ▣ BMS compatibility
- ▣ Hygiene version according to VDI 6022
- ▣ EC fans – top German quality
- ▣ Great thermal characteristic
- ▣ Circulation damper
- ▣ Constant airflow and pressure control
- ▣ Automatic rotary heat exchanger control

DUPLEX Roto-N

performance graphs



DUPLEX Roto-N

1500, 2500, 4000, 5000, 8000, 12000, 15000



DUPLEX Roto-N

DUPLEX Roto-N

rooftop version 1500-5000



rooftop version 8000-15000

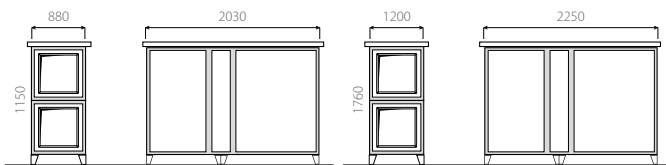


disassembled unit 8000-15000



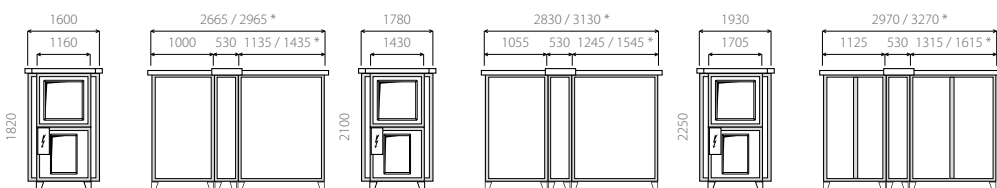
DUPLEX Roto-N

dimensions



DUPLEX 1500 / 2500 Roto-N

DUPLEX 4000 / 5000 Roto-N



DUPLEX 8000 Roto-N

DUPLEX 12000 Roto-N

DUPLEX 15000 Roto-N

(*) dimension without / with circulation damper



DUPLEX Roto

SELLER CONTENT POLICY

1. Two basic lines based on installation:

- DUPLEX 1500–15000 **Roto** – indoor version
- DUPLEX 1500–15000 **Roto-N** – rooftop version

2. Excellent design – the units are designed in a very attractive design with a continuous emphasis on the maximum level of comfort of installers. All the components are easily accessible in the unit.

3. Heat recovery efficiency up to 85 % – brand new rotary heat exchanger enables to achieve excellent heat recovery efficiency thus consequently reduces the energy costs. Optionally in the enthalpy version.

4. 100 % customization – DUPLEX Roto line air handling units follow the business philosophy of multiple variability. Designers can easily modify spigot connections, filters, heating, cooling or the position of the units themselves. Thus this unique variability in construction gives a competitive advantage because can meet requirements of almost any project.

5. Assembly design – DUPLEX 8000–15000 Roto units are assembled from 3 sections, that simplifies its transport and installation. Optionally can be delivered in parts and unit could be fitted in very inaccessible areas.

6. Integrated heating and cooling – all components are neatly included in the units so that installation and eventual servicing is as easy as possible.

7. Internet interface as a standard with aMotion control system – ATREA provides its products with internet connection as standard! Thus no extra expenses are needed. Via its built-in web server the units can be remotely controlled through the Internet which gives great marketing argument for your customers. (*)

(*) with aMotion control system

8. A major decrease in servicing – the standard internet connection in ATREA units means not only comfort and a remote control option for the user, but also greatly simplified, more convenient and significantly cost-saving servicing. All this makes the subsequent operation of the units vastly cheaper. (*)

9. Smart phones application – ATREA follows the modern trends and provides application that is iPhone and Android compatible. Thus a client can control all parameters of ATREA units easily with his cell-phone. (*)

10. LCC – life cycle cost programme – innovative help in business argumentation against cheap low quality units. Easily but on a high-professional way designed software that will prove economic return based on the exact calculation.

11. BMS compatibility – communication with a higher-ranking system for BMS is a matter of course. As standard via Modbus TCP, optionally via BACnet or KNX protocols.

12. VDI 6022 hygienic design – the unit meets all requirements of key certification for hygiene versions under German standard VDI 6022 that starts being internationally relevant. The Roto units can therefore be successful in projects whose specifications require a healthy, clean and easy to maintenance product.

13. Labyrinth sealing – DUPLEX 8000–15000 Roto rotary heat exchanger might be equipped with special labyrinth sealing. This unique solution improves the already excellent tightness against short circuit on the unique values of up to 1.5%.

14. Ecodesign – the units meet requirement in accordance with Commission regulation (EU) No. 1253/2014 (Ecodesign).

DUPLEX Roto / Roto-N

MANAGER CONTENT POLICY

Heat recovery efficiency up to 85 %

Rotary heat exchanger allows to achieve a high efficiency of heat recovery and the subsequent cost savings. Besides standard coupling regenerators are offered also provided exchangers hygroscopic layer to enhance moisture transfer.



Rotary heat exchangers are a Eurovent certified product of the renowned Czech company Kastt spol. s.r.o



Circulation damper

Circulation valve used for mixing exhaust and supply air.



Web server (*)

A web server that allows running the unit over the internet to drastically reduce the cost of servicing and indirectly also the market entry price of the unit of ATREA units.



1. Absolute customization – the great variety of possible construction gives a great advantage to place the units in any project.

2. Short delivery time – despite the 100 % customization the delivery time is 3 weeks and earlier.

3. Vast reduction in servicing costs – Control via the Internet enables easy servicing including error message history, firmware updates and information on the current settings of the unit. As a result the time costs of the servicing department are vastly reduced. (*)

4. ATREA selection software – All advantages are supported by the company's major marketing tool – its proprietary design software to help your clients design HVAC equipment easily, intuitively and efficiently. At the same time the software is used to efficiently check various designs for correctness and completion.

5. LCC – life cycle cost programme – helps with the reasonable and exact argumentation in communication with your customers.

6. Unique labyrinth sealing – (optional accessory for DUPLEX 8000–15000 Roto) significantly reducing shorts compared to common types of rotary heat exchangers.

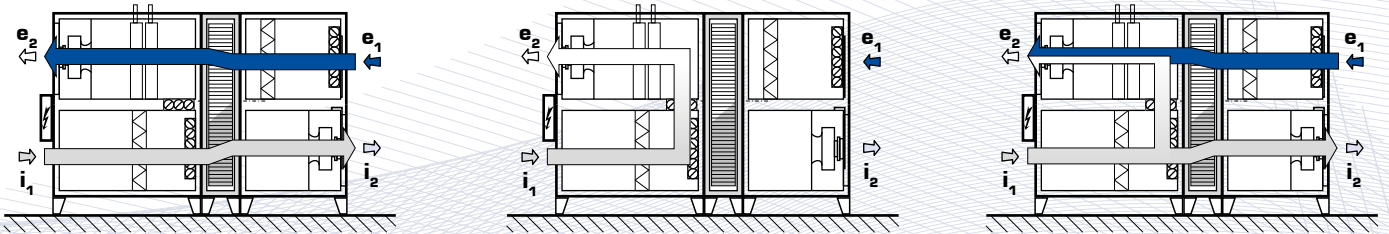
(*) with aMotion control system



ENGINEERING Roto

Equal pressure ventilation

1. Ventilation with heat recovery with re-heating (with cooling)
2. Circulation heating or cooling
3. Combined mode (heating with circulation)



TECHNICAL PARAMETERS

ROTO OFFERS MULTIPLE CONFIGURATIONS AND SPIGOT CONNECTIONS, that allows to choose the right unit to fit any project.

- **Unit casing** – Sandwich panels with mineral wool or PIR insulation ensure great thermal and acoustic insulation.
- **Filters ISO Coarse 90 % / ePM10 50 % / ePM1 55 %** – Cassette filters, easy to replace thanks to the ingeniously designed clips. The unique design allows filtration through the filter frame as well.
- **5 temperature and 6 pressure sensors inputs** – A wide range of temperature, air and pressure sensing options, fully compatible with ATREA's own control system aMotion.
- **Easy access** – the hinged door opens fully for easy access to all equipment sets of the unit. They enable easy installation and any servicing of the unit.
- **Fast commissioning** – factory canned cabling and “plug-and-play” connectors from the perspective of measurement and control significantly shorten installation time and eliminates the possibility of incorrect wiring unit.
- **Labyrinth sealing** – a special type of seal that minimizes air leaks out of the heat exchanger and mixing supply air with extract below 1,5 % volume flow. Available for DUPLEX 8000–15000 Roto units.

- **Servo drives** – Top quality Belimo servo drives.
- **Low noise** – Very good acoustic properties of our units can be defined for various working points in our selection software.
- **Constant flow** – The units can be equipped with accessories supplied to enable constant flow control.
- **Constant pressure** – Roto series units can also be provided with accessories for a constant pressure mode.



Heating – DUPLEX Roto offers wide variety of heating possibilities. It can be provided with integrated water heaters or external electrical reheaters.



Cooling – built-in water or direct evaporator (heat pump mode).



SELECTION SOFTWARE

www.atrea.eu

ATREA offers its proprietary design software that is a highly useful and practical tool to select DUPLEX series units and provides great marketing support!

Very positive feedback from designers of all over Europe gives a good opportunity to easily include ATREA's units in all kinds of projects.

Very detailed calculations on all specifications are standard.

The software checks whether all components were selected and whether the selected system is working. This way you can avoid any possible mistakes.

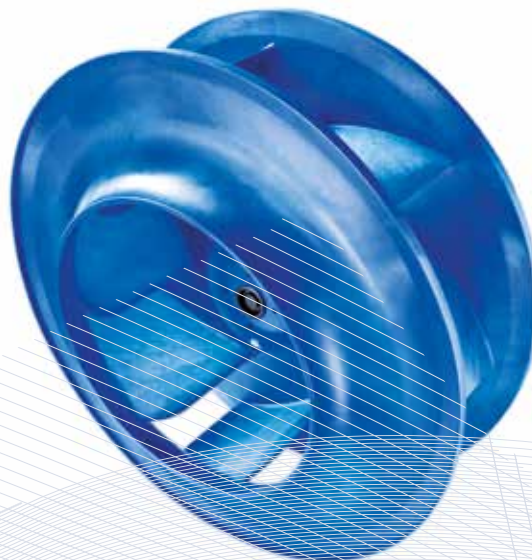
It includes:

- Selecting a unit and its accessories
- Showing parameters of the selected appliance
- An option to adjust the various parameters, designs or mounting positions of the units
- Selecting the control system with accessories in a functional set
- Electrical wiring diagrams
- Displaying and printing the components installed, an h-x diagram and HVAC diagrams
- Price specifications of individual components
- Print output to a printer or PDF
- Exporting drawings and diagrams to DXF in 2D or 3D
- Sending the design and export by e-mail
- **Additionally, the design software includes a full catalogue of ATREA's products in PDF format.**



EC FANS

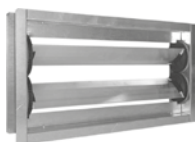
Fans from the world's top producer Ziehl Abegg. The outstanding German quality helps eliminate servicing costs. Roto units use backward bending blades fans to ensure great SFP ▶



OPTIONAL ACCESSORIES

Shut-off dampers

Shut-off dampers to be fitted on the suction port (the unit's inlet).



Air filtration

As standard DUPLEX Roto series units are provided with G4 / G4 cassette filters. An M5 or F7 filter class can be ordered separately.



RE-TPO Control manifolds for hot-water air heaters

They are intended to control the heating performance of the hot-water heaters.



Circulation damper

with servo drive.



Flexible flanges

Flexible flanges to be fitted on both circular and rectangular ports in sizes corresponding to the unit's port.



T hot water air heater

Hot-water heaters integrated in the unit.



EPO-V electrical re-heaters

Heaters to be installed in circular or rectangular ducts connected to DUPLEX Roto units.



CHF direct cooler

Direct coolers to be installed in the unit. Its possible to choose from 3 different performance types.



CHW chilled water cooler

Chilled water air cooler built-in in the unit.



R-CHW control manifolds for chilled water coolers

They are designed to control the cooling performance of chilled water coolers.



Constant flow and pressure control

Manometers reading fan and inlet duct pressure.



Inclined manometers

A filter accessory for the easy visualisation of current pressure loss of the filters.



DUPLEX Roto



aMotion CONTROL SYSTEM

„high-tech“ control system line with all comfort and possibilities

● aTouch and aDot controllers (touchscreen)



● Control via internet



● Smartphone application



INTEGRATED WEB SERVER AS STANDARD *

A service technician is able to remotely check the setting, check any defect and promptly fix the problem.

- Remote software update with preserving user settings.
- Show error messages, including history.
- Intuitive and user friendly interface with display both basic and servis parameters.

Various functions of the aMotion control system:

- **Constant flow** – An option to fit sensors for constant flow control.
- **Constant pressure** – An optional accessory for constant pressure control.
- **CO₂ sensors, relative humidity sensors and air quality sensors** – An option to set the intensity of ventilation automatically based on those parameters.
- **Modbus TCP** – Communication with a higher-ranking system for BMS.
- **User preferences** – including setting weekly programmes for ventilation, heating and cooling modes. Immediate manual override settings for more convenience to the user as well as weekly programme control.
- **External inputs function** – ventilation switches as required.
- **Combined heating and preheating** (electrical or water based)
- **Zoning** – the ability to split the building into zones and define their operation.
- **BACnet / KNX** – optional converter enables connection to the superior system via BACnet or KNX protocol.

(*) with aMotion control system



BUSINESS Roto



Why DUPLEX Roto?

E **Easy** – Easy to integrate in the project.

M **Multiple** – Multiple customized design.

C **Compact** – Roto is versatile thanks to compact size.

E **Efficient** – However compact, Roto is highly efficient – up to 85 % of heat recovery efficiency.

• With very short delivery time

• With two kinds of control system – high demand aMotion control system

Roto Is the Way





ENGINEERING Roto

Perfectly isolated (class T2)
frame construction with minimal thermal bridges: 1500–5000 Roto **TB1**, 8000–15000 Roto **TB2**.

Shut-off dampers tightly close inlets.

Rotary heat exchanger with recovery efficiency up to 85 %.

Integrated heaters and coolers with aluminium fins and copper tubes.

Sealing material according to VDI 6022.

High quality servo drivers enable steady function of by-pass and circulation dampers.

Safety switch to shut off the power in case of emergency.

Low energy, maintenance free EC fan technology ensures long term savings on operating costs.

aMotion control system with internet and BMS connection as a standard.

Built-in temperature sensors for the fully automatic operation.

Pressure sensors for filter monitoring.

Base frame ensures stable and rigid design.

Labyrinth sealing optionally improves the already excellent tightness against short circuit. Available for DUPLEX 8000–15000 Roto.

Built-in drive ensures the most efficient operation.

ISO Coarse 90 % / ePM10 50 % / ePM1 55 % high grade filters provide an ultra hygienic indoor climate and protect the heat exchanger from contaminator.

Circulation damper with servo drive to increase heating or cooling effect.



ATREA s.r.o.
Československé armády 32
466 05 Jablonec nad Nisou
Czech Republic

email: atrea@atrea.eu